

dunetpc - Task #21181

DQM configuration to display beam signals in APA 3

10/18/2018 12:33 PM - David Adams

Status:	Closed	Start date:	10/18/2018
Priority:	Normal	Due date:	
Assignee:	David Adams	% Done:	0%
Category:		Estimated time:	0.00 hour
Target version:			
Description			
DQM would like to produce plots showing beam particles similar to those I showed at yesterday's protoDUNE sim/reco meeting: https://indico.fnal.gov/event/18731 A configuration should be added to dunetpc to enable this.			

History

#1 - 10/18/2018 12:37 PM - David Adams

- File `adcrow_tpp0z_run005308_evt000040.png` added

I attach an example plot here.

#2 - 10/19/2018 02:08 PM - David Adams

First pass is in place: `protodune_dqm_apa3zbeam.fcl`

Maxim or George, could you try this out?

da

#3 - 10/22/2018 04:26 AM - Georgios Christodoulou

This is working fine, thank you David.

Would it be possible to save only beam trigger images and add a box or a circle or a line where the beam is expected?

Thanks.

George

#4 - 10/22/2018 08:54 AM - David Adams

Work is underway to filter events by trigger flag.

I can add the option to draw a box but I have seen the beam entry point change over a couple FEMBs. And the track can extend over the full depth of the APA.

#5 - 10/22/2018 09:42 AM - Georgios Christodoulou

There must be something clear on the event display to make it obvious, even for someone looking the plot for the first time, from where the beam is expected. Maybe an arrow is better?

#6 - 10/22/2018 01:37 PM - David Adams

We now have a trigger filter in place. Please point me to the top-level fcl for the DQM job so we can modify it to use the filter.

#7 - 10/22/2018 03:35 PM - Georgios Christodoulou

https://github.com/DUNE/p3s/blob/master/inputs/larsoft/evdisp/eventdisplay_data_apa3zbeam.fcl

#8 - 10/22/2018 08:08 PM - Maxim Potekhin

Georgios Christodoulou wrote:

https://github.com/DUNE/p3s/blob/master/inputs/larsoft/evdisp/eventdisplay_data_apa3zbeam.fcl

Tested in pre-production, added the new category "apa2" to both p3s and DQM server DB and logic.

#9 - 10/23/2018 07:23 AM - David Adams

From Maxim:

David,

I ran a couple of test jobs just on a single event each.

If I increase the number of events in the job description, will your software produce multiple PNG files? My scripts should still work, there will be multiple images.

Thank you,

Maxim

Yes, there will be multiple images and users should be able to quickly view these in turn to convince themselves that a beam-induced signal appears in the same place from event to event. Note that this location has been observed to shift between runs.

da

#10 - 10/23/2018 09:25 AM - David Adams

George:

Add this as the second line:

```
#include "ProtoDUNETriggerFilter.fcl"
```

Add this in physics:

```
filters: {  
  trigfilter: @local::pdsp_trigfilter_beam  
}
```

Add change trigger_paths to this:

```
produce: [ timingrawdecoder, trigfilter, ssprawdecoder, tpcrawdecoder, dataprep ]
```

You will then only process events with beam triggers.

You will need dunetpc v07_07_03_01 which will be installed shortly (see [#21179](#)) or the head of dunetpc.

#11 - 10/23/2018 10:33 AM - Georgios Christodoulou

A couple of extras requested; add the event run and time on the plots either on the title or on the right/left corner.
Thanks.

#12 - 10/24/2018 08:51 AM - David Adams

- Subject changed from DQM configuration to display beam signals in APA 3 to DQM configuration to display beam signals in APA 3

#13 - 10/24/2018 08:54 AM - David Adams

- File `adcraw_tpp0z_run005308_evt000076-opt1.png` added
- File `adcraw_tpp0z_run005308_evt000076-opt2.png` added
- File `adcraw_tpp0z_run005308_evt000076-opt3.png` added

Dunetpc can now add trigger names and event times to plot titles. And a second title is added in the lower left corner for channel-tick plots (same will be added for detector display). Using these, I have generated the three attached plots. Let me know which (if any) of these is preferred.

#14 - 10/25/2018 04:50 AM - Georgios Christodoulou

Adding trigfilter crashes larsoft under v07_07_03_01. The fcl file is here
https://github.com/DUNE/p3s/blob/master/inputs/larsoft/evdisp/eventdisplay_data_apa3zbeam.fcl

Also, option 2 from the plots above seems ok.

#15 - 10/25/2018 07:50 AM - David Adams

When I try to run in v07_07_03_01, I do see the error:

```
fnal:dune> lar -c eventdisplay_data_apa3zbeam.fcl -s /pnfs/dune/tape_backed/dunepro/protodune/np04/beam/detect
or/None/raw/06/92/81/04/np04_raw_run005308_0001_dll.root -n 2
Failed to parse the configuration file 'eventdisplay_data_apa3zbeam.fcl' with exception
---- search_path BEGIN
    Can't find file "ProtoDUNETriggerFilter.fcl"
---- search_path END
```

Is this what you see?

The trigger filter is not in that release. You can use the head ((your fcl does run there), wait for this week's release or ask for v07_07_03_02 now if you want that fcl file to work.

I pointed you to the fcl file protodune_dqm_apa3zbeam.fcl and it appears you copied code from the version in the head. I expect you to instead include this file and add your code to use my configuration of dataprep. Then your job should work in either release and automatically pick up any changes that I make in the future. The same holds for the other dqm configurations.

#16 - 10/25/2018 08:17 AM - Georgios Christodoulou

No, this is what I see using dunetpc head (only appears if the trigfilter is enabled)

```
%MSG-s ArtException: ProtoDUNETriggerFilter:trigfilter@Construction 25-Oct-2018 15:15:31 CEST ModuleConstruction
cet::exception caught in art
---- Can't find key BEGIN
LogLevel
---- Can't find key END
%MSG
Art has completed and will exit with status 65.
```

#17 - 10/25/2018 08:48 AM - David Adams

Again I just ran with the head and all is fine. I did a fcl dump and the configuration for ProtDUNETriggerFilter does include LogLevel. I ran this in a directory that only includes your top-level fcl file. Do you have an extra copy of ProtoDUNETriggerFilter.fcl floating around somewhere?

Please try "fcdump ProtoDUNETriggerFilter.fcl". This should show a location in your build area and that file should include LogLevel.

Make sure your build is up to date.

#18 - 10/25/2018 08:57 AM - David Adams

Examples of channel-tick plots and the detector display plot with the new-style labels may be found at <http://home.fnal.gov/~dladams/protodune/dqm/run005542/plots.html>.

#19 - 10/25/2018 10:11 AM - Georgios Christodoulou

Did you enable the trigfilter in the fcl file? It is off by default.
Make sure that this line is not commented out:
produce: [timingrawdecoder, trigfilter, ssprawdecoder, tpcrawdecoder, dataprep]

I tried fresh with the head and I still get the same error. Also, I don't see LogLevel in ProtoDUNETriggerFilter.fcl

#20 - 10/25/2018 10:30 AM - David Adams

No, I just tested your file as I found it.

But I did run into the problem in my own testing. Problem is file has DebugLevel instead of LogLevel. I must have looked ten times at the file without spotting it.

Anyways it is fixed now in the head. Sorry for the trouble.

#21 - 10/25/2018 11:00 AM - Georgios Christodoulou

Great. It is working now. Thanks.

#22 - 11/30/2018 09:08 AM - David Adams

- Status changed from Assigned to Closed

This was added long ago.

Files

adcraw_tpp0z_run005308_evt000040.png	69.9 KB	10/18/2018	David Adams
adcraw_tpp0z_run005308_evt000076-opt1.png	55.2 KB	10/24/2018	David Adams
adcraw_tpp0z_run005308_evt000076-opt2.png	55.2 KB	10/24/2018	David Adams
adcraw_tpp0z_run005308_evt000076-opt3.png	55.6 KB	10/24/2018	David Adams